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a coating substantially surrounding the core and effective to slow the release of the additive component into the aqueous coolant in the open circulating cooling water system, the coating being insoluble in the aqueous coolant in the open circulating cooling water system, and including a polymer selected from the group consisting of homopolymers, and copolymers including units obtained from only two (different) monomers.

49. (New Claim) The method of claim 48, further comprising adding a microbiocide to the additive component of the core before placing the controlled release additive composition in the open circulating cooling water system.

Remarks

This is in response to the Examiner's communication mailed October 8, 2002. A response to the Office Action is due January 8, 2003. Accordingly, this response is being timely filed.

Claims 23-47 were pending. By way of this response, claims 23, 38, 43, 44, and 47 have been amended, and claims 48-49 have been added. Accordingly, claims 23-49 are pending.

As a preliminary matter, applicant acknowledges that claims 26, 27, 29, 31, and 47 are free from the prior art, and would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claim(s). Applicant has amended claim 47 to be in independent form, and

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respectfully submits that claim 47 is in condition for allowance.

Item 2 of the Office Action-Rejections Under 35 U.S.C. § 102

Claims 23-25, 28, 33-35, 38-40, 42, 44, and 45 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Jorda et al. (U.S. Pat. No. 5,585,050).

Applicant has amended claims 23 and 38, as set forth above. The amendments to the claims similarly apply to claims 24-25, 28, 33-35, 39-40, 42, 44, and 45 due to their dependencies from claims 28 or 38. Applicant respectfully traverses the rejections as they relate to the amended claims.

Claim 23 and 38 recite that the core that has a solid, granular, or particulate form. In other words, the core of the claimed invention is not a liquid.

Jorda specifically teaches liquid cores, which are necessary for the instant and massive release of active ingredients contained therein (column 3, lines 39-41 and line 52). Because Jorda fails to teach a solid, granular, or particulate core, as recited in the claims, claims 23-25, 28, 33-35, 38-40, 42, 44, and 45 are not anticipated by Jorda under 35 U.S.C. § 102.

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Items 3-4 of the Office Action-Rejections Under 35 U.S.C. § 103

Claims 23-25, 28, 30, 33-38, and 46 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Mitchell et al. (U.S. Pat. No. 5,741,433) in view of Jorda et al. Claim 32 has been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Mitchell et al. in view of Jorda et al. further in view of Hiestand et al. (U.S. Pat. No. 3,242,051).

Applicant has amended claims 23 and 38 to recite that the core that has a solid, granular, or particulate form. The amendments to the claims similarly apply to claims 24-25, 28, 30, 33-38, and 46 due to their dependencies from claims 28 or 38. Applicant respectfully traverses the rejections as they relate to the amended claims.

The Office Action states that it would have been obvious to use the dimethyldidecyl ammonium chloride and EVA copolymer of Jorda as the intended core material and wall material, respectively, in Examples 3 and 4 of Mitchell to produce the containing-containing microcapsules suggested by Mitchell, and then use them in a cooling tower.

Applicant respectfully disagrees that one of ordinary skill in the art would be motivated to combine the teachings of Jorda and Mitchell. Instead, applicant submits that Jorda and Mitchell actually teach away from the combination.

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Jorda specifically indicates that it is an object of their invention "to provide microcapsules which can be applied in systems of instant and massive release of active principles ..." (column 3, lines 38-41; emphasis added). In addition, Jorda states that their invention provides microcapsules that "lend themselves to applications as systems with instant and massive release of active ingredients by perforation or crushing" (column 4, lines 37-40; emphasis added). Clearly, Jorda is focusing on rapid, instantaneous release of the active ingredients of the microcapsules obtained by the physical, rapid destruction of the coating of the microcapsules. This essential feature of Jorda's invention may be due to the fact that Jorda's microcapsules are being incorporated into non-liquid matrices such as papers, textiles, including bandaging materials, sponges, polymer-based materials, such as gloves, nail brushes, and disinfectant powders (column 4, lines 16-21) where such microcapsules can be crushed or perforated. Jorda's microcapsules are not designed to be used in a liquid system. Among other things, placing Jorda's microcapsules in an aqueous solution would likely cause the coating of the microcapsules to soften, which would likely substantially reduce the ability to perforate or crush the microcapsules to obtain the instant and massive release of the active ingredients contained in the microcapsules.

In contrast, Mitchell's capsules are provided to obtain a controlled, slow release of the active components contained in the capsules to provide release of the active components over an extended period to maintain a concentration of the active

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component within a desired range (see, for example, the abstract; column 1, lines 20-25; and column 2, lines 59-67). Mitchell specifically avoids instant and massive release of active components contained in the capsules (see, for example, column 2, lines 40-52).

Because Jorda specifically requires instant and massive release of active components in a microcapsule, and Mitchell specifically requires slow, controlled release, the references teach away from each other, and applicant submits that one of ordinary skill in the art would not be motivated to combine the teachings of Jorda and Mitchell. "As a general rule, references that teach away cannot serve to create a prima facie case of obviousness." (*McGinley v. Franklin Sports, Inc.* 60 USPQ2d 1001, (CAFC 2001) citing *In re Gurley*, 31 USPQ2d 1131, (Fed. Cir. 1994)). In addition, one of ordinary skill in the art would not be motivated to use Jorda's microcapsules in a liquid environment as claimed, and as disclosed by Mitchell, because the microcapsules would no longer be able to be crushed or perforated to achieve an instant and massive release of the active components. Furthermore, applicant respectfully submits that one of ordinary skill in the art would not be motivated to combine the teachings of Jorda with Mitchell, because Jorda teaches microcapsules containing liquids, as opposed to the solids disclosed by Mitchell.

In view of the above, applicant submits that the claims are not obvious from, and are patentable over, Mitchell, alone or in combination with Jorda and/or Hiestand, under 35 U.S.C. § 103.

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Items 5-6 of the Office Action-Rejections Under 35 U.S.C. § 112

Claim 43 has been rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not sufficiently described in the specification. In particular, the Office Action states that the original disclosure does not disclose a copolymer of ethylene and acrylate.

Applicant has amended claim 43 by replacing acrylate with vinylacetate. Support for the amendment can at least be found at page 11, line 15.

Accordingly, applicant respectfully submits the rejection under 35 U.S.C. § 112 has been overcome.

Items 7-8 of the Office Action-Obviousness-Type Double Patenting

Claims 38-44 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of application Serial No. 09/539,914.

Applicant will consider filing a terminal disclaimer to overcome the rejection upon the indication that claims 38-44 are free from the prior art under 35 U.S.C. §§ 102 and 103.

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Items 9-10 of the Office Action-Claim Objections

The Office Action states that claims 26, 27, 29, 31, and 47 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Office Action states that the prior art doesn't disclose or fairly suggest the method of releasing the additive composition in an open circulating cooling water system of claim 47.

Applicant has amended claim 47 to be in independent form to include all the limitations of the base claim. Accordingly, applicant submits that claim 47 is in condition for allowance.

Applicant has also added claims 48 and 49 directed to methods of releasing an additive composition in an open circulating cooling water system of a cooling tower. In view of the reasons for allowance indicated in the Office Action, and applicant's review of the prior art, applicant respectfully submits that claims 48 and 49 are similarly in condition for allowance.

Each of the present dependent claims is separately patentable over the prior art. For example, none of the prior art disclose, teach, or even suggest the present compositions or methods including the additional feature or features recited in any of the present dependent claims. Therefore, applicant

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submits that each of the present claims is separately patentable over the prior art.

In conclusion, applicant has shown that the present claims are not anticipated by and are unobvious from and patentable over the prior art under 35 U.S.C. §§ 102 and 103. Therefore, applicant submits that the present claims, that is claims 23-49 are allowable. Therefore, applicant requests the Examiner to pass the above-identified application to issuance at an early date. Should any matters remain unresolved, the Examiner is requested to call (collect) applicant's attorney at the telephone number given below.

Date: 1/7/03

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted via facsimile to the Commissioner for Patents in Washington, DC 20231, to fax number 203-872-9310 (GAU 1712), on: January 8, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 23, 38, 43, 44, and 47 have been amended as follows:

23. (Amended) A controlled release additive composition for use in an open circulating cooling water system comprising:

a solid, granular, or particulate core comprising an additive component including a microbiocide effective in an open circulating cooling water system; and

a coating substantially surrounding the core and effective to slow the release of the additive component into the open circulating cooling water system, the coating being insoluble in the open circulating cooling water system and including a polymer made up of units from no more than two monomers.

38. (Amended) A controlled release additive composition for use in an open circulating cooling water system, the composition comprising:

a solid, granular, or particulate core comprising an additive component effective in an aqueous coolant of an open circulating cooling water system; and

a coating substantially surrounding the core and effective to slow the release of the additive component into an aqueous coolant in the open circulating cooling water system, the coating being insoluble in the aqueous coolant in the open circulating cooling water system, and including a polymer selected from the group consisting of homopolymers, and copolymers including units obtained from only two different

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monomers, provided that one of the two different monomers is selected from the group consisting of vinylversatate and ethylene.

43. (Amended) The controlled release cooling additive composition of claim 39, the copolymer includes units obtained from an vinylacetate [acrylate].

44. (Amended) The controlled release additive composition of claim 39, wherein the coating is about [3] 1% to about [15] 40% based on the total weight of the composition.

47. (Amended) A method of releasing an additive composition into an open circulating cooling water system comprising placing a controlled release additive composition [the controlled release additive composition of claim 38] in contact with an aqueous coolant present in an open circulating cooling water system, the controlled release additive composition comprising
a core comprising an additive component effective in an aqueous coolant of an open circulating cooling water system; and
a coating substantially surrounding the core and effective to slow the release of the additive component into an aqueous coolant in the open circulating cooling water system, the coating being insoluble in the aqueous coolant in the open circulating cooling water system, and including a polymer selected from the group consisting of homopolymers, and copolymers including units obtained from only two different monomers, provided that one of the two different monomers is

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selected from the group consisting of vinylversatate and ethylene.

The following claims have been added:

48. (New Claim) A method of releasing an additive composition into an open circulating cooling water system comprising placing a controlled release additive composition in contact with an aqueous coolant present in an open circulating cooling water system of a cooling tower, the controlled release additive composition comprising

a core comprising an additive component effective in an aqueous coolant of the open circulating cooling water system; and

a coating substantially surrounding the core and effective to slow the release of the additive component into the aqueous coolant in the open circulating cooling water system, the coating being insoluble in the aqueous coolant in the open circulating cooling water system, and including a polymer selected from the group consisting of homopolymers, and copolymers including units obtained from only two different monomers.

49. (New Claim) The method of claim 48, further comprising adding a microbiocide to the additive component of the core before placing the controlled release additive composition in the open circulating cooling water system.